

PLUG AND ABANDONMENT PROCEDURE (RE-ENTER)

NORTHMOOR ACRES 1

Step	Description of Work
1	Locate and expose 8 5/8" casing stub. Extend stub to surface and install 8 5/8"x 11" SOW, 3M casing head with 3000 psi ball valves in both outlets. Prepare location for workover rig. Install perimeter fence as needed.
2	Provide notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Install perimeter fence as needed.
3	MIRU workover rig. NU 9" 3000 psi BOP stack on casing head. PT BOP and csg head per approved Form 2. Function test BOPE. NU rotating head on BOP. Hook up return line to shale shaker on flat tank. Install a choke or choke manifold one casing outlet.
4	PU 7 7/8" mill tooth bit, necessary drill collars and drill pipe/work string (WS). Drill through existing cement plugs at surface (10 sk) and at the base of surface casing (35 sk plug 1/2 in and 1/2 out of 8 5/8") using fresh water with biocide.
5	Once surface cement plugs are drilled, Displace hole with drilling mud and continue going in hole washing down to 4 1/2" casing stub at ~6340'
6	TOOH standing back WS. LD drill collars and bit. RIH WS open-ended w/minimum 4 jts of 2 3/8" tail pipe, hydro-testing to 3000 psi. Work tail pipe 100' into 4 1/2" casing to ~6440'. Circulate and condition hole for cement plug.
7	Run gyro survey from ~6300' to surface with 100' stations. Forward results to Sabrina Frantz in Evans Engineering.
8	RU Cementers. Spot cement plug consisting of 130 sx "G" w/ 0.4 % CD-32, 0.4% ASA-301 and R-3 To achieve 2:30 pump time. Mix at 15.8 ppg and 1.15 cuft/sack. (150 cuft of slurry). Cement volume based on 9 1/2" OH from 6340' to 6140' with 40% excess. POOH to ~5000' and circulate clean. WOC per cement company recommendation.
9	Tag top of plug at ~ 6140'. TOH and LD 2 3/8" tail pipe. TIH WS open-ended to 4420'
10	Spot cement plug consisting of 340 sx "G" w/0.25pps cello flake, 0.4% CD-32, 0.4% ASA-301 with CaCl2 as necessary, Mixed at 15.8 ppg, 1.15 cuft/sack (391 cuft of slurry). Cement to be preceded by 5bbls fresh water, sodium metasilicate mixed in 20 bbls water, and another 5bbl spacer. Cement volume based on 12" OH from 4330' - 3920' with 20% excess. Caliper log on file.
11	POOH to ~ 3000' and circulate clean. WOC per cement company recommendation. Tag plug at 3920'. LD WS to place end of WS at 930'.
12	RU cementers. Pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min.) fresh water spacer immediately preceding cement.
13	Pump a balanced Stub Plug from 930'-134' : 550 sx Type III w/0 .25#/sk cello flake and CaCl2 as deemed necessary mixed at 14.8 ppg and 1.33 cf/sx (732 cuft of slurry). Cement volume based on 200' in 8 5/8" csg, and 596' in 12.0" OH + 40% excess. TOH and WOC per cementing company recommendation.

- 14 Tag cement with tbq: TOC must be at or above 234'. If not, contact Evans engineering. TOH and LD WS.
- 15 RU wireline. Run and set CIBP in the 8 5/8", 24# surface casing at 80'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD wireline.
- 16 RDMO workover rig.
- 17 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.
- 18 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 19 Excavate hole around surface casing of sufficient size to allow welder to cut off 8 5/8" casing at least 5' Below ground level (depending on land owner requirements).
- 20 Fill surface casing with 4500 psi compressive strength cement (sand and cement only - no gravel)
- 21 Spot weld steel marker plate on top of sfc casing stub. Marker shall be labeled with well name, well number, legal location (1/4 1/4 descriptor) and API number.
- 22 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 23 Back fill hole with native material. Reclaim location to landowner specifications
- 24 Submit Form 6 to COGCC. Provide "As plugged" wellbore diagram identifying the specific plugging completed.

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